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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,619	11/24/2003	Edward Julius Creighton	TS0932 (US)	4247

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EXAMINER

SAMPLE, DAVID R

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/720,619	Applicant(s) CREYGHTON ET AL.	
	Examiner David Sample	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040527;20040419</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS 20031124</u> . |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Amiridis et al. (US Patent No. WO 95/15208).

Amiridis et al. discloses a zeolite Y (i.e., faujasite) having:

- A Si/Al ratio of 13.79 (i.e., a SiO₂/Al₂O₃ ratio of 27.58),
- A unit cell size of 24.32 Å, and
- A total surface area of 845 m²/gm (i.e., a micropore surface area of 743 m²/g and a mesopore surface area of 102 m²/gm).

These properties anticipate the relevant property recitations in claims 1-4.

It is noted that the surface area of the reference is less than 850 or 890 m²/g, however, each of these ranges are preceded by the word ‘about’ which broadens the range. In other words, the surface area of the reference is deemed to anticipate the claim 1 and 4 range in view of the latitude in interpreting the word “about” in claims.

The reference does not specifically disclose the method of measuring the surface area, however, lacking evidence to the contrary, one of ordinary skill in the art would expect to have the same surface area regardless of the method of measuring the surface area.

The reference fails to disclose the micropore volume of the disclosed zeolite Y. However, the zeolite product of the reference is indistinguishable from the presently claimed zeolite. Moreover, micropore volume and surface area are integrally related, and the reference discloses a surface area that is the same as the claimed surface area. For these reasons, the claimed micropore volume is assumed to be inherent to the zeolite of the reference.

Claim 9 defines the product by how the product was made. Thus, claim 9 is a product-by-process claim. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having the properties recited in claim 1. As noted above, the reference suggests such a product.

Claims 1-5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Scherzer ("Dealuminated Faujasite-Type Structures with $\text{SiO}_2/\text{Al}_2\text{O}_3$ Ratios over 100," *Journal of Catalysis*, vol. 54, pages 285-288, 1978).

Scherzer et al. discloses a faujasite zeolite having surface areas approaching $850 \text{ m}^2/\text{g}$ and a unit cell size of $24.18\text{-}24.27 \text{ \AA}$. See page 286, Table 1, Sample No's 1-10 calcined at 540° C , and page 288, third full paragraph.

It is noted that the surface area of the reference is less than 850 or $890 \text{ m}^2/\text{g}$, however, each of these ranges are preceded by the word 'about' which broadens the range. In other words, the surface area of the reference is deemed to anticipate the claim 1 and 4 range in view of the latitude in interpreting the word "about" in claims.

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The reference does not specifically disclose the method of measuring the surface area, however, lacking evidence to the contrary, one of ordinary skill in the art would expect to have the same surface area regardless of the method of measuring the surface area.

The reference fails to disclose the micropore volume of the disclosed zeolite Y. However, the zeolite product of the reference is indistinguishable from the presently claimed zeolite. Moreover, micropore volume and surface area are integrally related, and the reference discloses a surface area that is the same as the claimed surface area. For these reasons, the claimed micropore volume is assumed to be inherent to the zeolite of the reference.

Claim 9 defines the product by how the product was made. Thus, claim 9 is a product-by-process claim. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having the properties recited in claim 1. As noted above, the reference suggests such a product.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. (US Patent No. 5,242,677).

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Cooper et al. discloses a zeolite Y having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratio of 40-70, a surface area of 700-900 m^2/gm , and a unit cell size of 24.09-24.14 Å. See col. 4, lines 42-45. These ranges overlap the ranges for these properties recited in instant claims 1-4, 9, and 10. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

The reference does not specifically disclose the method of measuring the surface area, however, lacking evidence to the contrary, one of ordinary skill in the art would expect to have the same surface area regardless of the method of measuring the surface area.

The reference does not disclose the properties of claim 5, however, one of ordinary skill in the art would expect that the zeolite of the reference would have the claimed properties because the remainder of the properties overlap, and the process recited in the reference performs the same steps as the present invention.

Cooper et al. describes a method in which a zeolite Y having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratio of 4.5-5.5 is ion exchanged to a Na_2O level of 1-4%. See col. 3, lines 1-15. This zeolite is steam calcined at a temperature of 900-1300° F (i.e., 482-704° C) at a partial pressure of steam of 0.2-1 atm. See col. 2, lines 6-11. Lastly, the zeolite is acid treated. See col. 2, lines 45-49.

The alkali metal levels, $\text{SiO}_2/\text{Al}_2\text{O}_3$, and calcining temperature overlap the ranges recited in claim 9. Again, overlapping ranges have been held to establish *prima facie* obvious.

Further as to claim 10, the reference discloses hydrocarbon conversion at col. 2, lines 53-55.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (US Patent No. 5,536,687) in view of Cooper et al. (US Patent No. 5,242,677).

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Ward et al. discloses a hydrocracking catalyst containing zeolite Y and zeolite beta. See the abstract. The zeolite Y should have a unit cell size of less than 24.45 Å. *Id.* Such catalysts have a higher activity and selectivity for light gasoline and turbine fuel. See col. 3, lines 7-10.

As noted above, Cooper et al. discloses a zeolite Y which renders obvious the claimed zeolite Y with unit cell sizes of less than 24.45 Å.

Therefore, it would have been obvious at the time the invention was made to have used any zeolite Y having a unit cell size of less than 24.45 Å in the catalyst of Ward including the catalyst of Cooper et al. because the resultant catalyst has a higher activity and selectivity for light gasoline and turbine fuel.

The recitations of instant claims 7 and 8 can be found in Ward at col. 3, lines 7-10 and col. 9, lines 64-68.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

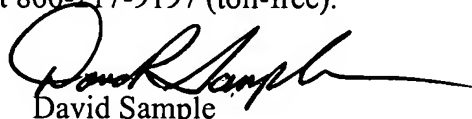
The examiner notes that Cooper et al. (US PGPub 2004/0141911) is particularly relevant to the presently claimed catalyst, however, the reference is not prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (571)272-1376. The examiner can normally be reached on Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (572)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in dark ink, appearing to read "David Sample", is written over the printed name.

David Sample
Primary Examiner
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